Illinois Department of
Natural Resources
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Pat Quinn, Governor
Marc Miller, Director

November 8, 2013

Mr. Mike Lopez, LEED AP
Director of Facility Operations
Valley View Community Unit School District 365U
755 Dalhart Avenue
Romeoville, IL 60446

RE: Transportation Facility Salt Storage/Parking Extension, Romeoville, Will County
Endangered Species Consultation Program
EcoCAT Review #1405327

Dear Mr. Lopez:

The Department has received from Wight & Company a submission for this project for the purposes of consultation with the Valley View School District pursuant to the *Illinois Endangered Species Protection Act* [520 ILCS 10/11], the *Illinois Natural Areas Preservation Act* [525 ILCS 30/17], and Title 17 *Illinois Administrative Code* Part 1075.

The proposed action entails the construction of a salt storage dome and the extension of employee parking areas at the existing District Transportation Facility on Forestwood Drive. As you know, this facility lies directly adjacent to the Romeoville Prairie Forest Preserve, which is also dedicated as the **Romeoville Prairie Illinois Nature Preserve**. That status places it on the Illinois Natural Areas Inventory (INAI) and thus subject to the consultation process.

Romeoville Prairie also provides critical habitat for the federally-listed endangered **Hine's Emerald Dragonfly**, *Somatochlora hineana*; and the federally-listed plants, **Lakeside Daisy**, *Tetraneuris herbacea*, and **Leafy Prairie Clover**, *Dalea foliosa*. In addition, the Nature Preserve provides essential habitat for the state-listed endangered **Blanding's Turtle**, *Emydoidea blandingii*, and **Spotted Turtle**, *Clemmys guttata*, as well as the state-listed threatened plants, **Slender Sandwort**, *Minuartia patula*, and the **Ear-Leaved Foxglove**, *Tomanthera auriculata*. The listed plants are part of the rare dolomite prairie ecosystem present in the Nature Preserve; while the highly calcareous ground water supplied by a surficial regional aquifer flowing from beneath Romeoville is a crucial element of this ecosystem.

The ground water aquifer, which flows beneath the Transportation Center, has been designated by the Illinois Environmental Protection Agency as a Class 3 Special Resource Ground Water (May 2010), and is protected under the *Illinois Groundwater Protection Act* [415 ILCS 55] and Title 35 *Ill. Administrative Code* Part 620. From the petition for designation of the Romeoville ground water: "Dissolved chloride concentrations in ground water are a major concern at the site. High concentrations

of dissolved chloride can adversely influence native plant communities. The threshold level used by Panno et al. (1999) to explain degradation of a fen plant community in a sensitive northeastern Illinois fen-wetland complex was 45 milligrams per liter (mg/L). In that study, contaminant plumes were coincident with a loss of wetland biodiversity, with native fen plant communities being replaced by more non-native and generalist species. De-icing agents are a chloride source, with large volumes often being applied to roadways and railroad beds during winter."

Because the ecosystem supplied by this ground water resource is very sensitive to elevated chloride concentrations, any action likely to increase chloride levels represents a significant threat of damage and degradation. Consequently, the plan to construct a salt (sodium chloride) storage and handling facility in a location where all runoff must necessarily enter either the ground water or the surface waters of the Romeoville Nature Preserve is particularly troubling to the agencies entrusted with managing and protecting this irreplaceable natural resource.

The Department's strongest and foremost recommendation in this case is to forego the construction of a salt storage dome anywhere on the Transportation Facility. However, in several conversations in which the School District, the Village of Romeoville, the U.S. Fish & Wildlife Service, the Forest Preserve District of Will County, the Illinois Nature Preserves Commission, and the Department have all participated, the School District and the Village have explained why the construction of a salt dome, as and where proposed, is currently the only viable alternative. Consequently, consideration has shifted to means of minimizing the discharge of chlorides from the Facility.

The major threat emanates from the salt loading and handling area outside the dome. Despite the most diligent housekeeping measures, salt spilled and crushed during loading operations is likely to be dissolved by precipitation and enter the Facility's storm water management system. Collected runoff is moved via storm sewers to an on-site dry detention basin, which in turn discharges northward to a larger wet detention basin shared by industrial park tenants, which then discharges eastward into the Nature Preserve. It is very likely—if not certain—the on-site dry basin is in contact with the underlying ground water, as is the remainder of the industrial park storm water system. In any event, whether through the ground water or the surface water, chlorides from the handling area will enter the Nature Preserve and will contribute to the cumulative degradation of the protected ecosystem.

One alternative raised is the prospect the School District can begin to use liquid brine or other liquid de-icing agents to a greater extent as an alternative to the use of salt at all of its facilities. This will reduce the amount of salt stored at the facility, and certainly would reduce the level of chlorides leaving all school district facilities, including the Transportation Facility. The Department strongly endorses such efforts, but this may not fully diminish the need to store and handle salt.

It is much better to prevent the infusion of chlorides than to mitigate for their presence. A roofed handling area of sufficient height and extent to accommodate trucks and loaders while preventing snow and rain from falling on the handling area would accomplish a great deal in limiting the export of chlorides. Because the proposed storage and handling areas already consist of impermeable surfaces, a roof will not increase site runoff volumes and thus not require any modification of the existing on-site detention basin to accommodate larger flow volumes. A roofing system may also offer the advantage of capturing uncontaminated runoff which can be infiltrated on-site as clean ground water recharge which may provide localized quality benefits to areas of the Nature Preserve closest to the facility. The

Department recognizes budgetary resources may not be immediately available to modify the project in this manner, but it should be possible to design the initial construction to allow or facilitate the later addition of a roof over the handling area.

When considering significant changes in facilities and operations which may incur unexpected short-term costs, it is always helpful to have data which can be used to inform decision-makers. Site-specific data on the current and changing quality of on-site and off-site ground water and discharged surface waters may be crucial in this regard, and can establish the effectiveness of management practices intended to accomplish School District safety goals with a minimum of harm to natural resources. The Department recommends the School District design and implement two water quality monitoring systems for this purpose.

The objective of a surface water monitoring system should be to identify the incremental increase in discharged chlorides as a result of the construction and use of the salt storage dome, and any subsequent incremental decrease due to the use of best management practices. Results should be presented in terms of both concentrations and total loads. Ideally, monitoring can begin before construction of the salt dome to provide a baseline. Samples should be taken, whenever there is flow, as close to the salt handling area as possible, but at least where collected flows enter the on-site detention basin, as well as at its discharge point (differences between in-flow and out-flow concentrations will represent dilution or contributions from the remainder of the Facility, or from ground water). The results of such sampling will signal the need for additional or different management practices.

Monitoring ground water effects is more complex. The upper elevation of the ground water beneath the Facility will vary considerably across its area and with seasons, and the direction of flow may also vary with conditions. However, a minimum of two wells will be needed to evaluate effects, one within the Facility and one within the Nature Preserve at a point selected to be most representative of ground water quality influenced by the Facility. (The external well will need the consent of the Forest Preserve District and the Illinois Nature Preserves Commission if located within the Nature Preserve.)

The project has a second element: the extension of the employee parking area at the southern end of the facility. The initial proposal entailed the use of pervious pavers and a bioswale to avoid or minimize the need to enlarge the on-site detention basin through maximizing infiltration of precipitation. In most circumstances, the Department strongly endorses the use of pervious pavements and other infiltration technologies but, in the presence of a protected ground water resource, the benefits must be carefully evaluated against the risks. This is another instance where a ground water monitoring program can be useful.

Currently, the behavior and quality of the ground water beneath the proposed parking area are unknown, though the depth to bedrock is shallow, likely less than ten feet. The latter conditions suggests that ground water responses to infiltrated precipitation may be relatively rapid and/or transient. If the quality of the ground water, in terms of chloride concentrations, is already poor, it may be that additions through infiltration may not be significant, whereas if the quality is good additional chlorides may cause significant local degradation. Because it is already intended to delay construction of this portion of the project, there is time to install a monitoring well to characterize existing conditions. The information from a well will inform a decision to use pervious or standard technology for the parking area surface.

Resorting to standard paving technology may force expansion of the on-site detention basin in order to satisfy local storm water codes. Because of shallow bedrock and the presence of the Class 3 Ground Water, increasing the storage volume of the detention basin is best achieved by enlarging the surface area of the basin, not its depth. Because of the presence of the ground water, and the evidence deduced from a number of aerial photographs taken over time, there is a high probability the ground water surface often is higher than the basin floor, suggesting that ground water often exfiltrates the bottom and sides of the basin. Again, monitoring the behavior of the ground water at the basin should be instructive. If monitoring confirms exfiltration is frequent, any use of an artificial liner for the pond becomes very problematic. Moreover, under such conditions, water quality in the basin is much more likely to be influenced by the quality of the ground water than the ground water's quality by that of surface runoff in the basin.

Extension of the parking area poses another issue, however, for the Blanding's Turtle population in the area. In 2012, researchers captured and released an adult Blanding's Turtle from the marsh located between the Transportation Facility and the Village's North Waste Water Treatment Plant. (For the purposes of their research, the marsh was dubbed "School Bus Marsh," for obvious reasons.) Unfortunately, the gender of the turtle was not determined.

The Blanding's Turtle is classified as semi-aquatic, making frequent excursions into terrestrial habitats. Moreover, this species lays its eggs in nests farther from wetlands than any other aquatic/semi-aquatic species in Illinois, up to and sometimes beyond one kilometer from the water. Females demonstrate a high degree of fidelity to nesting sites, repeatedly returning to the same areas throughout their long lives (up to 60 years or more). It has been shown that gravid females will make repeated efforts to circumvent obstacles in order to reach specific areas in order to nest. If the nest site has been converted to an unsuitable condition, the prospects for successful reproduction plummet that year and, perhaps, for years thereafter.

Given the degree of human development adjacent the Nature Preserve, there is a reasonable probability that the area proposed for the parking area extension is now being used by one or more individual Blanding's Turtles as a nesting ground. If so, conversion of the area to parking will be detrimental to local reproduction and pose a direct threat of adults or hatchlings being crushed by vehicles. If construction occurs during the nesting season when nests are present, the potential for an incidental taking of the nests arises. Because the same conditions existed prior to construction of the current Transportation Facility, past experience at the Facility may be illuminating. Employees should be formally polled to inquire whether any turtles have ever been observed in the current vehicle parking areas. If so, it increases the probability that Blanding's Turtles use the site as reproductive habitat.

Because parking extension is not imminent, time may remain to investigate the use of the site by turtles. Silt fences (used as drift fences) can be erected around the proposed expansion area to intercept any turtles seeking entrance during the nesting season (May through July). Pit traps and/or funnel traps can be attached to the fence to capture any such turtles for identification and release. (Specific scientific permits from the Department would be necessary.) If this effort shows that Blanding's Turtles are attempting to use the area, exclusionary features can be added to the construction plans, along with mitigation efforts to replace lost nesting opportunities. Because the Blanding's Turtle cannot scale a vertical surface six inches high, a concrete "reverse curb" or low retaining wall can be added to the design which prevents turtles from entering the site but also allows any turtles who succeed to exit.

Adding an experimental nesting ground outside the perimeter might also be a possibility. However, if it is established that Blanding's Turtle conservation is an issue for the Transportation Facility, further consultation with the Department is strongly recommended.

In summary, the Department recommends:

1) The District should forgo the construction of a salt dome and handling area at the Transportation Facility;
2) The District should explore and implement, to the extent feasible, alternative de-icing methods which minimize the use of salt;
3) If a dome is constructed, stringent housekeeping policies must be in place to minimize the losses of salt to offsite runoff;
4) If a dome is constructed, the handling area should be roofed to minimize exposure of salt to the elements;
5) The District should design and implement a surface water monitoring program to document the off-site discharge of chlorides;
6) The District should design and implement a ground water monitoring program to document changes to special resource ground water quality, with an emphasis on chlorides, attributable to District actions;
7) The District should re-evaluate the use of pervious pavements and other infiltration technologies in light of potential adverse effects to the special resource ground water;
8) The District should investigate the use of the Transportation Facility property as nesting habitat by the Blanding's Turtle;
9) The District should incorporate parking extension area design features which prevent turtles from interacting with vehicles and mitigate for lost reproductive opportunities.

Consultation on the part of the Department is closed, unless the School District desires additional information or advice related to this proposal. In accordance with 17 Ill. Adm. Code 1075.40(h), the District should notify the Department of its decision regarding these recommendations, whether it will:

- Proceed with the action as originally proposed;
- Require the action to be modified per Department recommendations (please specify which measures if not all will be required); or
- Forgo the action.

This consultation is valid for two years unless new information becomes available which was not previously considered; or the proposed action is modified; or additional species, essential habitats, or Natural Areas are identified in the vicinity. If the project has not been implemented within two years of the date of this letter, or any of the above listed conditions develop, a new consultation is necessary.

The natural resource review primarily reflects the information existing in the Illinois Natural Heritage Database at the time of this consultation, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments.

If additional protected resources are encountered during the project's implementation, the applicant must comply with the applicable statutes and regulations. Also, note that termination does not imply IDNR's authorization or endorsement of the proposed action. Please contact me if you have questions regarding this review.

Sincerely,

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cc: Steve Gulden, Village of Romeoville
Kyle Buck, Wight & Company